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World Reporting Service on Plant Diseases and Pests

Two New Stem Borers of Cacao in New Guinea

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THE genus *Pantorhytes* (Otiorhynchinæ, Curculionidæ) has many species in the tropical zone of the Australian Zoogeographical Region which includes the Territory of Papua and New Guinea. Among them, *P. plutus* has been known for many years as a stem borer of cacao in New Britain (1, 2, 3). It was found also by the writer on cacao in Lihir Island, east of New Ireland.

In 1955, two other species of *Pantorhytes* were found by the writer in the Territory of Papua and New Guinea, causing serious damage to cacao trees. One of them, *P. proximus* Sternb. was found in cacao plantations in the Markham Valley, near Laae on the mainland of New Guinea. This species lays eggs on stems or branches of cacao trees and the larvæ bore into the tissue of the bark and the cambium. Most of the larvæ are found in and around the jorquette [2] of the tree and up to 20 larvæ and pupæ have been observed in the jorquette of a single tree. In most cases the larva bores into the stem or the branch up to a depth of ½ to 1 inch and then feeds more or less parallel to the surface. Sometimes it bores deeper into the branch, especially if the branch is not very thick, and in such a case, it pupates just under the surface of the bark on the opposite side. If many larvæ are feeding in close proximity to each other, the shape of the tunnels is very irregular. Fresh frass at the entrance of the bore-hole indicates the presence of the larvæ. A large quantity of greyish gummy exudate at the entrance of the bore-hole is usually a sign that the beetle has emerged and secondary saprophagous Diptera larvæ can be found in the bore-hole.

Pantorhytes proximus rarely attacks immature trees or trees younger than two and a half to three years of age. If there are not more than two or three larvæ in a young tree, no serious set back of the tree growth occurs. Severe setback is caused by six to eight or more larvæ in the center of the jorquette or in the branches, close to the main ramification. Repeated damage by many larvæ in a jorquette often results in the cracking of the stem which eventually kills the tree. In the case of a large scale attack on the branches, they gradually wither and are liable to break in the wind. Termites may then appear as secondary pests.

The adults of *Pantorhytes proximus* were not observed defoliating cacao trees, but it is very likely that they feed on leaves, as a closely related species, *P. stanleyanus* White, was observed by J. G. Brookes defoliating *Hibiscus tiliaceus* at Cairns, North Queensland. So far no parasites of *P. proximus* have been observed.

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[1] Appreciation should be expressed to Dr. W. J. Hall, Director of the Commonwealth Institute of Entomology, and to Sir Guy A. K. Marshall of the British Museum for the identification of the two species and to the following gentlemen for supplying geographical, ecological and systematical data and for technical assistance: Mr. J. G. Brookes (Cairns), Mr. W. Fielding (Popondetta), Mr. J. Hughes (Morobe Agricultural Station), Mr. A. Musgrave and Mr. D. McAlpine (Australian Museum, Sydney), Mr. C. Searle (Awala Plantation), Dr. F. Uther-Baker (East Fremantle), Dr. F. van Emden (Commonwealth Institute of Entomology), Mr. W. A. Van den Berk (Sangara Estate), and Mr. G. Whittaker (Awalalunga Plantation).

[2] Jorquette is the point at which a chupon forks into fan branches.

A series of experiments against *Pantorhytes proximus* were commenced recently at Morobe Agricultural Station, Bubia, New Guinea, using an insecticidal lacquer, which has been effectively applied against the white coffee borer, *Anthores leuconotus* Pasc., in East Africa (4).

Another species of *Pantorhytes* was found in December 1955 in the northern district of Papua, near Mount Lamington, causing severe damage to cacao. Specimens of this species were recently examined by Sir Guy A. K. Marshall and they appeared to represent a new species. The larvæ of this species in general have habits similar to the larvæ of *P. proximus*, but there are certain differences in their ecology and other characteristics. A larger proportion of the larvæ of this northern Papuan species can be found in the branches at a greater distance from the jorquette than the larvæ of *P. proximus*. Larvæ of this new species have been observed feeding in cacao pods and adults have been seen feeding on the surface of the pods.

Most of the species of *Pantorhytes* are inhabitants of the lowland rain forests and it is very likely that their larvæ are of polyphagous nature. Most cacao plantations in Papua and New Guinea were established in the coastal region by clearing the virgin rainforests and many plantations are still more or less surrounded by them. The sudden appearance of a species of *Pantorhytes*, therefore, can be expected any time in a plantation bordering the virgin forest, but as a rule, they tend to appear in growing populations only in the neglected plantations. Some of the plantations in New Guinea were abandoned during the last war and secondary bush grew high up between the cacao trees and the shade trees, thus providing habitats for the insects somewhat similar to those in the rain forests. The clearing of those plantations and the maintenance of strict plantation sanitation would reduce the number of the weevils in the cacao areas. If some plantations were left in a neglected state for several years, the neighboring plantations would be endangered even if they were kept clean and adequate shade was maintained. *P. proximus* was observed to spread in such a way. Insects of this genus were not found on cacao trees interplanted with coconut or rubber trees.

Because of their habit of attacking only the mature trees, it is unlikely that the species of *Pantorhytes* would be accidentally transferred to other areas through young seedlings. Their dissemination could take place by the transferring of eggs or young larvæ on seed-pods. This could be prevented by close examination and insecticidal treatment of the surface of the pods, before they are shipped to other areas for propagation purposes.

The adults of *Pantorhytes* are unable to fly and, as many other Curculionids, they have the habit of dropping to the ground when danger appears. Those two characteristics would be useful in devising control measures. Once the beetles are shaken out of the trees, an appropriate chemical preparation, applied with a brush around the stem, should be able to prevent them from crawling back to the trees.

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2. Dun, G. S. 1954. Annual report of the senior entomologist, 1952-53. Papua & N. Guinea Agr. Gaz. 8 : 18-27.
3. Dun, G. S. 1955. Economic entomology in Papua and New Guinea 1948-1954. Papua & N. Guinea Agr. Jour. 9 : 109-119.
4. Tapley, R. G. 1955. Insecticidal lacquers and white coffee-borer control. East Afr. Agr. Jour. 20 : 145-148.

Identification of Two Fungi Attacking Fruit of *Strophanthus intermedius* in Puerto Rico [1]

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STROPHANTHUS, a genus of tropical plants, aroused considerable interest a few years ago because a cortisone precursor is present in the seeds of some species; [2] consequently horticultural studies on fruit yields of *S. intermedius* Pax. were begun in Puerto Rico. Before long, it became evident that *Strophanthus* is not a practical source of cortisone. [3] However, this genus is still of pharmacological interest and the horticultural work has continued.

It was reported [4] that several natural factors seriously reduce fruit yield, a major factor being a parasitic fruit blight disease. A study was made of the pathogens involved. Fruit at all stages of development was infected, but the greatest number of diseased specimens was observed when the fruit was very young. Infected young fruits were dry, wrinkled, and blackened (Figure 1) and many of them dropped prematurely. Frequently young flowering stems also were involved showing black, necrotic symptoms. The surface of the diseased fruit usually contained a variety of fungal fructifications.

Isolations were made from young fruits (less than 5 centimeters long) which showed early stages of the blight. Four specimens were surface sterilized (1 : 1000 HgCl for 15 minutes.) and three pieces of diseased tissue were removed aseptically from each fruit and transferred to potato-dextrose agar plates. A non-sporulating, vigorously growing fungus developed within 24 hours from each of the 12 tissue isolates. The fungus appeared to be identical in every case.

Pathogenicity of one isolate was tested. Nine healthy fruits in the field were tagged, swabbed with alcohol and then a cut was made aseptically in the pericarp of each fruit. Six fruits were inoculated by inserting mycelium from a pure culture into the cut and the three others served as uninoculated controls. In seven days, all inoculated fruits showed typical fruit-blight symptoms and were completely necrotic. The controls were healthy.

Numerous flask-shaped fungal fructifications, filled with spores, were imbedded in the surfaces of the inoculated fruits. When single spores from 12 fruiting bodies were isolated on potato-dextrose agar, each gave rise to non-sporulating fungal growth identical to that isolated from the tissues of the young diseased fruits. The pathogenicity test was repeated, using mycelium from the single spore cultures. The same results as above were obtained.

Histological sections showed that the flask-shaped bodies were pycnidia measuring from 170 to 204 microns in diameter. The spores, ellipsoid to ovoid, 24 to 31 microns long and 13 to 15 microns wide, were hyaline and one-celled when they first emerged from the pycnidium. However, after about half a day under high humidity, these emerged spores turned dark and became bicelled. The fungus was identified as *Diplodia theobromæ* (Pat.) Now.

Approximately 50 diseased young fruits were collected at random from the field and the surface of every one contained pycnidia

[1] This was done in co-operation with the Plant Introduction Section, Agricultural Research Service, U. S. Department of Agriculture. The identification of the two fungi reported here was made by J. A. Stevenson, Plant Disease Epidemics and Identification Section.

[2] CALLOW, R. K., R. D. MEIKLE, and D. A. H. TAYLOR. 1951. The source of sarmentogenin. Chem. & Ind. *1951*: 336-337.

[3] CORRELL, D. S., B. G. SCHUBERT, H. S. GENTRY, W. O. HAWLEY, W. BALLY, and F. TOBLER. 1955. The search for plant precursors o cortisone. Econ. Bot. 9 : 307-375.

[4] SPENCER, J. L., and H. F. WINTERS. 1956. Compatibility, pollination, and disease in relation to fruit yields of *Strophanthus intermedius* in Puerto Rico. Trop. Agriculture (in press).

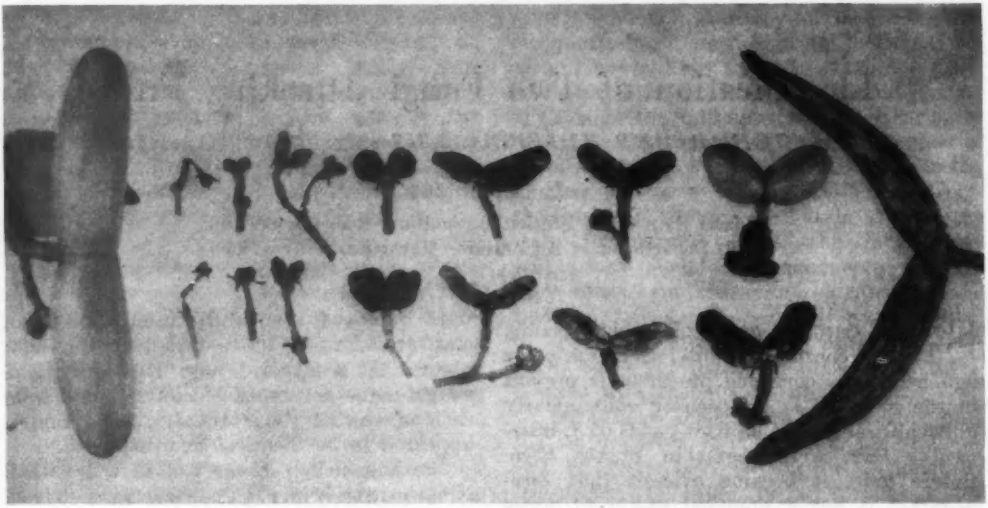

Figure 1. Blighted fruits of *Strophanthus intermedius*, ranging from very young to almost mature. Several healthy fruits are included for comparison.

of *Diplodia theobromæ* as well as other secondary microorganisms. On the other hand, another fungus besides *D. theobromæ* appeared to cause fruit blight of older fruit. When 30 fruits approaching maturity (15 centimeters to 18 centimeters long) were examined, only about one-half showed signs of *D. theobromæ*, whereas, on the rest, a different type of fungal fructification was observed. Spores were isolated and cultured and the resulting growth was very distinct from the *Diplodia* in that it was slower, less compact, and spores were produced. A pathogenicity test similar to that described for *D. theobromæ* was carried out. The inoculated fruits required ten to 14 days before they were completely blighted. The controls remained healthy.

The surfaces of the inoculated fruits were covered with fructifications of the second fungus which was easily re-isolated. Histological sections of the diseased pericarp revealed the presence of acervuli with hyaline, single-celled, oblong spores measuring 12.5 to 16 microns long and 3 to 4.5 microns wide. This pathogen was identified as *Colletotrichum gloeosporioides* Penz.

These observations show that a fruit-blight disease of *Strophanthus intermedius* can be caused by either of two fungal pathogens, *Diplodia theobromæ* or *Colletotrichum gloeosporioides*, both of which are widely distributed. If *S. intermedius* should be cultivated commercially for seed in tropical areas where these two common fungal pathogens are present, severe fruit losses should be anticipated and control measures will probably be necessary.

A New Disorder of Oriental Persimmon in Italy

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A PECULIAR disorder has been observed in the leaves of the Oriental persimmon (*Diospyros kaki*) in Italy since 1947. It is characterized by a partial black discoloration of the leaf veins, visible especially on the lower side of the leaf. This condition is generally accompanied by chlorosis of the leaf, which makes the veinal necrosis more conspicuous (Figure 1) and sometimes also by a slight hyponasty. Leaves showing various degrees of interveinal chlorosis are frequently found on the same tree. Furthermore, leaves of seriously affected plants appear generally shorter and more squat than the normal ones. In central, and especially in southern Italy, chlorosis has been observed to be followed by dark speckling of the leaf tissue (Figure 2). Since this speckling appears together with the other symptoms, it is tentatively attributed to the same cause.

The first evidence of the leaf disorder normally begins to appear in May, and if sufficiently severe, it may cause leaf drop by June or July. This premature leaf-fall is usually restricted to the shoots on the top of the tree.

On the shoots of affected trees suberose blisters and necrotic longitudinal furrows have sometimes been observed. Also ne-

Figure 1. Necrotic veins and interveinal chlorosis in a leaf of Oriental persimmon.

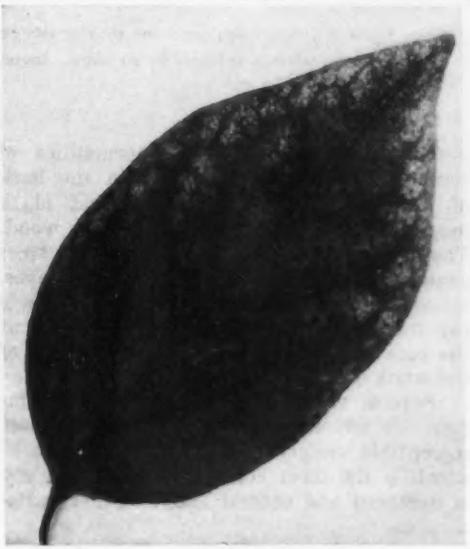

Figure 2. Chlorosis and dark speckling in a leaf of Oriental persimmon.

Figure 3. Oriental persimmon tree showing vein necrosis in nearly all the leaves above the wire girdling which is indicated by an arrow. Leaves below the constricted area are all normal.

crotic spots and various abnormalities of tissues have often been noted in the bark of larger shoots and branches, and black longitudinal streaks frequently in the wood. The trunks and roots of the affected trees generally appear to be sound. However, burrows of various bark-inhabiting insects can frequently, but not always, be found at the base of the branches or the lower part of the trunk of the tree.

Several varieties of the Oriental persimmon are affected by this disease, the most susceptible variety being the "kaki type"[1] which is the most commonly grown variety in northern and central Italy. Other varieties with leaves similar to "kaki type," all of which are commonly referred to as var. *lycopersicum*, are also liable to the attack. On the other hand, the types belonging to the var. *costata* are less susceptible.

This disorder has been spreading in Italy, now being found almost everywhere that the var. *lycopersicum* is grown. In the persimmon orchards which were thoroughly investigated, most of the trees had shown evidence of the disease in at least one of the years under observation. In some scattered instances the trees were so severely affected that they had died, whereas in other instances, with the timely and proper application of fertilizers, soil drainage, insect control and other cultural measures, the trees had apparently recovered. The disease became so prevalent and widespread in many orchards

[1] BALDINI E. and F. SCARAMUZZI. 1956. Contributo ad una indagine pomologica sulle cultivar di diospiro. I & II. Ann. Speriment. Agraria Supplem. 10 (1): XLI-LXVIII: 10 (2): I-XX.

between 1945 and 1950 that it might be considered as epidemic.

Diseased scions grafted on healthy looking plants have normally recovered, except for an occasional appearance of mild symptoms of the disease on the foliage of both the scion and the stock. More severe evidence of the disease occurs on such trees growing under unfavorable environmental conditions.

Localized but conspicuous veinal necrosis, often accompanied by interveinal chlorosis, has been observed repeatedly in leaves of persimmon trees grown from seed, located near the trees formerly diseased and then recovered. Symptoms on such trees, however, usually disappear after a short time.

It has been observed that if wire were tied around a branch, typical symptoms of the disease would invariably develop in the leaves above the constricted area. This has been true in both grafted and recovered trees and in apparently healthy trees used as tests (Figure 3).

The cause of the disorder has not been established. The type of symptoms and the behaviour of the affected trees appear to indicate, however, that it is possibly caused by a virus which is present latently in almost all of the Oriental persimmon trees of the variety *lycopersicum* that are grown in Italy. The symptoms are not shown, except under unfavorable growing conditions which might interfere with normal physiological functions of the plant or which might cause an exceptional multiplication of the virus. Further, the latent infection appears to protect the plants from further infection by the virus through grafting, as indicated by the apparent recovery of diseased scions when grafted onto healthy trees.

Plant Disease Situation in the United States[1]

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Cylindrocladium scoparium on Azaleas and Other Ornamentals

TIMONIN, M. I., and R. L. Self, associated respectively with Pearson and Company and the Alabama Agricultural Experiment Station, report that in the spring of 1955, a destructive disease caused by *Cylindrocladium scoparium* Morgan appeared on azaleas in the shade houses and the greenhouse rooting benches in Mobile County, Alabama. Losses of cuttings in the greenhouse varied from 10 to 100 percent. In the shade house the damage consisted of retarded growth due to partial defoliation and of loss of the more succulent wood of plants grown under very humid conditions. The disease was later

[1] This report is based upon material submitted by Collaborators of the Plant Disease Epidemics and Identification Section, Agricultural Research Service, United States Department of Agriculture.

Figure 1. Close view of Hinodegari azalea naturally infected with *Cylindrocladium scoparium*, showing leaves and stems covered by a moss of cobweb-like mycelial strands.

observed on azaleas in Baldwin County and on rooted cuttings of poinsettia in greenhouses at Montgomery.

Eight plants were added to the known hosts of this worldwide fungus: Indica azalea (*Rhododendron indicum*), Kurume azalea (*R. obtusum japonicum*), *Magnolia soulangeana*, *Hydrangea* sp., *Ilex rotundifolia*, *Pyracantha* sp., bottle brush (*Callistemon rigidus*), and poinsettia (*Euphorbia pulcherrima*).

On azalea, symptoms of two types, blight and wilt, were observed on both naturally infected and inoculated plants. On infected azalea leaves, both in the greenhouse and shade house the fungus produced a rapidly spreading blight. Infected leaves turned brown to black depending on the variety, the petiole bases softened, and the leaves usually dropped in three or four days. The bark of infected stems also turned brown in three or four days. In advanced stages, the leaves and stems were usually covered with a sparse to luxuriant mass of brownish mycelial strands (Figure 1). White powdery masses of conidia were often observed on the stems of cuttings in the greenhouse. These symptoms were reproduced on young rooted and unrooted azalea cuttings in the greenhouse by spray inoculations with liquid cultures. In the cutting-wilt phase of the disease leaf wilt was followed by leafdrop without the production of visible leaf spots or stem cankers. The bark and wood at the base of wilted cuttings were discolored and often water-soaked. In the advanced stages, vascular discoloration sometimes extended to the cutting tip. This phase of the disease was observed in many nursery greenhouses. It also was reproduced on azalea cuttings inserted in the inoculated rooting medium. Wilting occurred five days later.

On *Magnolia soulangeana*, symptoms produced on spray-inoculated plants consisted of a rapidly spreading, black, soft rot of the leaves and succulent stem tips. On plants inoculated through the rooting medium, a soft black decay of the bark developed quickly. On very succulent cuttings this decay also involved the wood. On older wood, only a brownish vascular discoloration occurred, which sometimes extended to the upper tip of the cutting in five days. Natural infections observed in two plantings had caused almost complete defoliation.

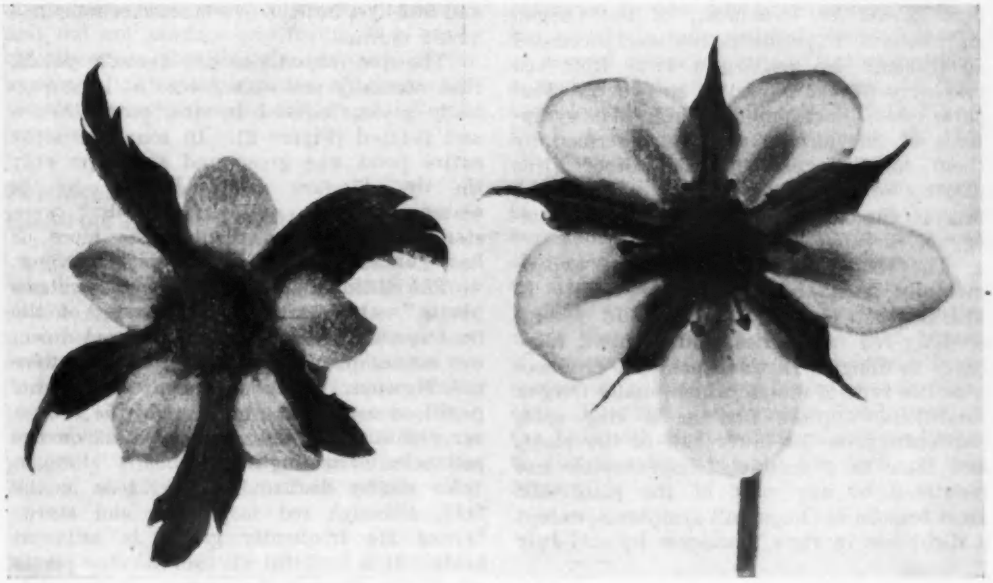

Figure 2. A flower of *Fragaria vesca* infected with virus from red raspberry. A normal flower at right.

On cuttings of *Pyracantha* and *Ilex rotundifolia* symptoms produced by inoculation were similar to those on azalea. Leaf spots on *Pyracantha* were zonate.

Evidently *Cylindrocladium scoparium* causes serious damping-off and leaf blight of many ornamentals under conditions of high humidity. Symptoms produced in the host vary depending upon the points of infection. Signs of the fungus may be absent under conditions of low or varying humidity, but with constant high humidity, they were obvious. Confusion is possible because of the presence of characteristic features of *Rhizoctonia*, such as the brown mycelial strands and zonate lesions on some of the affected plants. Even in pure culture on potato-dextrose agar the fungus may resemble *Rhizoctonia*.

It is suggested that *Cylindrocladium* has often been incorrectly reported as *Rhizoctonia*. Isolations should be made on both potato-dextrose agar and modified yeast-extract-mannitol agar for proper differentiation.

A Strawberry Disease Caused by a Virus from Raspberry

As previously noted,[2] Edward K. Vaughan and Harold W. Wiedman, of the Oregon Agricultural Experiment Station, succeeded to transmit by grafting a virus from red raspberry (*Rubus idæus*) to strawberry (*Fragaria vesca*), East Malling strain. The symptoms of this disease are now described by them to distinguish it from other virus diseases of strawberry and to indicate the unusual fundamental changes in the morphology of the affected plants.

The virus has been transmitted experimentally from the Washington variety to Washington, Cuthbert, Canby and several seedling red raspberries, and to black raspberry seedlings. In these plants it produces a mottle type of mosaic which, under Oregon conditions, appears first as a ring spot, particularly on the lower half of the plant, and later as a distinct foliage mottle not restricted to any part of the plant. In most seasons in Oregon all symptoms, except a slight loss in vigor, disappear by mid-July and do not reappear until the following season.

In *Fragaria vesca* the first symptoms appeared six weeks after the grafts were made. A slight yellowish stippling or mottling appeared in the new leaves of the mother plants and soon, also, in the runner progeny. No other symptoms except loss of vigor were noted during the first season, and during this period the disease would probably have been diagnosed as mild crinkle or as a non-persistent virus.

The first flowers that developed the following season were different from the normal flowers of *Fragaria vesca*. The styles were shorter with the total length reduced to not more than half the diameter of the ovary. The ovaries were reduced in number and greatly swollen, and were apparently sterile. Despite the presence of normal plants with pollen producing anthers, as well as bees, in the greenhouse, none of the affected flowers produced fruit.

The stamen filaments, which in a normal flower are 2 to 3 millimeters in length, were reduced to not more than 0.5 millimeters or were entirely lacking, and the anthers contained no pollen.

The five calyx lobes were greatly enlarged and leaf-like, but the five bracteoles remained nearly normal.

The five (sometimes six) obovate petals, that normally are white, were at least partially green, reduced in size, partly folded and pointed (Figure 2). In some cases the entire petal was green and in others only the tip. Flowers produced later in the season appeared quite normal but were sterile. All infected plants were more or less stunted and steadily declined in vigor.

The infected plants produced "runner plants" which arose at the nodes of the fruit spurs (Figure 3). When pegged down, the runner plants developed roots but were not vigorous. None of the affected plants produced any stolons, but as many as 16 runner plants were present at one time on the peduncles of a single plant.

No similar disease has been seen in the field, although red raspberries and strawberries are frequently grown in adjacent fields. It is doubtful whether infected plants would live through the winter. If they did, most growers would either destroy or report

[2] MILLER, PAUL R. 1955. Plant Diseases Situation in the United States. FAO Plant Prot. Bull. 4: 7-10.

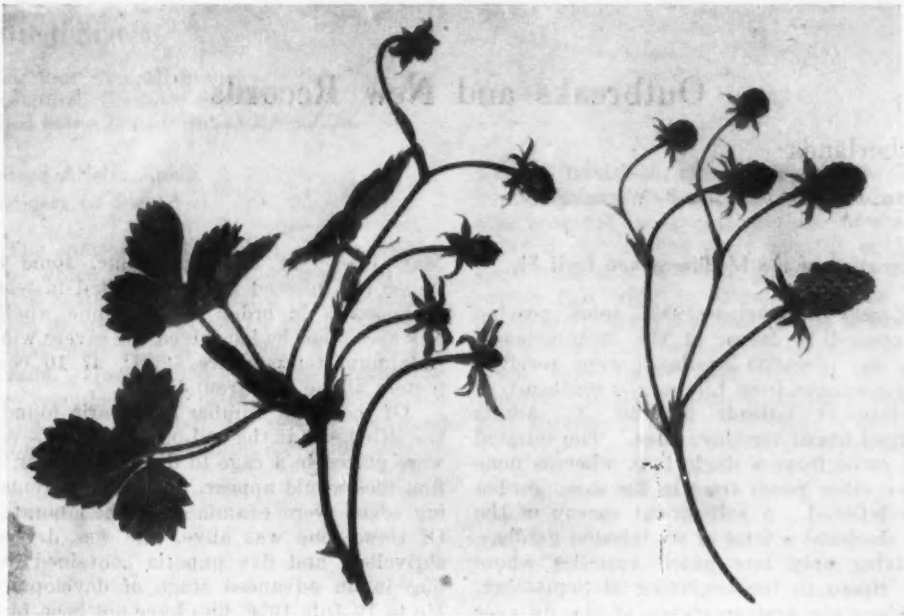

Figure 3. Fruit spur from a *Fragaria vesca* plant infected with virus from red raspberry, showing abortive fruits and production of a runner plant. Fruit spur from a normal plant at right.

any plants that were so severely affected and did not produce any fruit. It is probable therefore, that this virus is not a factor in the yellows virus complex affecting commercial strawberries in the Pacific Northwest.

Perithecial Stage of Cucurbit Powdery Mildew

T. E. Randall, of the State College of Washington, and J. D. Menzies, of the United States Agricultural Research Service, report occurrence of the perithecial stage of powdery mildew on *Cucumis* sp. in test plots at the Irrigation Experiment Station, Prosser, Washington. Field plantings of numerous Plant Introduction accessions of cucurbits became generally affected with mildew during the season of 1954. When these plants were examined in the fall after a light frost a few perithecia were noticed. Careful search on several occasions during October revealed a sparse production of perithecia on two accessions of cucumber — P. I. 181910 and P. I. 179260. None were found on any other cucurbit accession.

The perithecia matured and were found to contain an average of 11 asci, each with two spores. These and other features are characteristic of *Erysiphe cichoracearum* DC. ex Mérat.

This record is of particular interest because the first record in the United States of the perithecial stage of *Erysiphe cichoracearum* on potatoes was from the same location. Possibly the climatic conditions of the Yakima Valley are particularly conducive to the completion of the life cycle of this fungus.

Outbreaks and New Records

Netherlands

Plantenziektenkundige Dienst, Wageningen

Hibernation of the Mediterranean Fruit Fly

In early September 1955, some peaches infested by larvæ of the Mediterranean fruit fly (*Ceratitis capitata*) were received at Wageningen from Limburg, a southeastern province at latitude 51° 20′ N. Adults emerged about ten days later. The infested fruit came from a single tree, whereas none of the other peach trees in the same garden were infested. A subsequent survey of the area disclosed a total of six infested gardens, involving only late peach varieties whose fruit ripens in the beginning of September. This was the first incidence of the fly ever recorded in the Netherlands.

In order to determine whether the fly could overwinter in the southern Netherlands, the soil under the infested trees was left non-cultivated, and cages for trapping emerged flies were placed over it during the end of May 1956. At the same time, some soil under the infested trees was sifted in search for puparia in order to determine whether any specimens had survived the severe winter (minimum temperature –26°C. at 10 centimeters above the ground).

Of the small number of puparia found in the sifted soil at the end of May 1956, several were placed in a cage to determine when the first flies would appear, if at all; the remaining seven were examined in the laboratory. Of these, one was alive, one was dry and shrivelled, and five puparia contained dead flies in an advanced stage of development. Up to 19 July 1956, flies have not been found in the cages placed over the infested ground in the gardens nor elsewhere.

The above observations indicate that the Mediterranean fruit fly may survive the winters of the southern Netherlands.

Sudan

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Occurrence of Powdery Mildew on Cotton

Several outbreaks of powdery mildew on cotton were observed for the first time in the Sudan in December 1955. The disease appeared and spread on young off-season cotton plants at Shambat, near Khartoum. The infection was confined to the cotyledons and lower leaves; the affected plants recovered well and the new upper leaves were usually free from the disease.

The causal fungus is *Leveillula taurica* (Lév.) Arn., a very widespread parasite in the Sudan with a very wide host range. Most varieties of the Egyptian cotton (*Gossypium barbadense*) and the American cotton (*G. hirsutum*) were found to be susceptible, including the three commercial Egyptian varieties, X 1730, Domain Sakel and BLR 14/25 grown in the Gezira and the American varieties, BAR 7/8, SUS 16/1 and SUS 7/2.

Lime sulphur under the trade name of Sulfinette and sulphur dust under the trade name of Special Spreading Sulphur were found to be effective in controlling the disease, with no apparent injury to cotton leaves.

United States

Plant Pest Control Branch
Agricultural Research Service
United States Department of Agriculture

Spotted Alfalfa Aphid Continues to Spread

The spotted alfalfa aphid (*Pterocallidium* sp.), which was first discovered in the United States in New Mexico in 1954, caused severe destruction to alfalfa during the year in that State and in Arizona, California and Nevada. During 1955 damaging infestations were recorded again in these States and the species was reported in several aditional States including Arkansas, Colorado, Idaho, Kansas, Louisiana, Missouri, Nebraska, Oklahoma, Texas and Utah. Heavy damage also occurred in several of these new areas in 1955 and in the early months of 1956. Loss from this pest was particularly heavy earlier this year in Oklahoma. The first discovery of the aphid east of the Mississippi River was made in northern Florida in late April 1956. Since that time it has been reported in the States of Georgia, Illinois and Mississippi.

Plant Quarantine Announcements

Dominican Republic

An official notice, published in the *El Caribe* 28 April 1956, provides that importers of fruit, vegetables, seeds, tubers, rhizomes, bulbs and other types of plant stocks and materials must first obtain a permit from the Secretary of Agriculture prior to the entry of those materials, in accordance with Decree No. 1287 of 24 May 1935.

Decree No. 1287 specifies that the application for a permit must be signed by the interested parties and must contain the following information:

(*a*) name and address of applicant;
(*b*) name and address of the person or commercial firm through which importation will be effected;
(*c*) port of introduction;
(*d*) description of the material to be introduced, indicating the species and name;
(*e*) the quantity of each type of material;
(*f*) country of origin;
(*g*) name and address of the company supplying the materials.

Jamaica

1. The Customs (Importation) (Prohibition) (Fruit, Plant and Vegetables) Proclamation, 1955, published in the *Jamaica Gazette Supplement*, Vol. 78, No. 34, 9 June 1955, provides that the importation of unprocessed plant parts, plant materials, earth, soil, or any substance likely to contain any of them is prohibited save on the following conditions:

(*a*) the importer notifies the Director of Agriculture of such imports at least seven days before their arrival;
(*b*) all such articles are packed in sealed tins, consigned in care of the Director of Agriculture, and delivered only to an authorized person;
(*c*) such articles are to be sterilized by heat to 110°C. for 24 hours before their delivery to the consignee.

This is an amendment to the Customs (Importation-Prohibition-Fruit, Plant and Vegetables) Proclamation, 1949.

2. The Customs (Importation) (Prohibition) (Fresh Fruit and Vegetables) Proclamation, 1956, published in the *Jamaica Gazette Supplement*, Vol. 79, No. 32, 24 April 1956, prohibits the importation of fresh fruit and vegetables from the United States on account of the risk of introducing the Mediterranean fruit fly (*Ceratitis capitata*).

Union of South Africa

Proclamation No. 93 of 7 May 1956, published in the *Government Gazette*, Vol. 184, No. 5683, 25 May 1956, provides for restrictions on the introduction of certain plants and application of certain provisions to plants introduced from areas outside the Union. The measures specified, with necessary changes, are applicable for the introduction from anywhere excluding the Protectorates of Bechuanaland, Swaziland and Basutoland.

1. *Imports prohibited;*

(*a*) plant of *Hibiscus esculentus*.
(*b*) plant of *Hibiscus cannabinus*, excluding retted or decorticated kenaf fiber;
(*c*) any cotton plant or wild cotton plant of the genera *Gossypium*, *Thurbria*, *Bauhinia*, or any other plant of the family Malvaceæ;
(*d*) seed cotton and seedy cotton (all forms of cotton lint, linters, cotton waste or any other form of unspun cotton containing more than an average of five seeds per ¼ pound sample drawn at random).

2. *Cotton seed.* Importation is prohibited unless a permit has been obtained from the Department of Agriculture and no more than 1 pound of seed of any one variety may be introduced each year. The seed must be packed in new containers officially sealed in the country of origin and accompanied by an acceptable phytosanitary certificate officially issued in the country of origin, certifying that the seed-producing plants were examined in their living state and found to be free from dangerous diseases and pests, especially pink bollworm (*Pectinophora gossypiella*), and that the seed was adequately treated against insects before despatch. The seed must be fumigated at the port of entry before release.

3. *Unmanufactured cotton and cotton waste.* Cotton lint, linters, cotton waste, or any unmanufactured cotton or cotton containing unspun cotton material may not be imported unless a permit has been obtained. The issue of a permit

is subject to certain specific conditions relating to storage and treatment of waste. Fumigation, in an approved manner, may be required at the port of entry before release.

4. *Cotton samples.* Commercial samples may be introduced without authorization by a permit, provided that the weight of each sample does not exceed 5 pounds and that the samples comply with the conditions regarding the maximum number of cotton seeds in each sample lot. They are subject to inspection and fumigation before release.

5. *Semi-manufactured cotton and reclaimed cotton.* Semi-manufactured cotton, such as cotton wadding, purified cotton wool, spun waste, and reclaimed or reshredded cotton, containing no unspun or raw cotton, are exempted from the requirements for an import permit, certification, storage or fumigation.

6. *Cotton packing material.* It will be subject to inspection upon arrival and to disinfection or destruction if the packing material is suspected to have been in contact with cotton in a country where pink bollworm occurs.

News and Notes

FAO Meeting on Senn Pest

Senn pest (*Eurygaster integriceps*) is one of the most destructive insect pests in the Near East. It feeds on many gramineous plants but the cultivated small grains, especially wheat, suffer most. It is prevalent mainly in Iran, southeastern Turkey, northern and northwestern Syria, northern and northwestern Iraq and southern Russia. It is also found in Lebanon and Afghanistan, causing only limited damage.

The biology of the senn pest is sufficiently known but ecological factors affecting its development and prevalence have received very little study. Until very recently, chemical control was not practised and investigations are needed to solve the many problems involved.

In accordance with a recommendation made by the Eighth Session of the FAO Conference, an *ad hoc* Working Party on the Control of Senn Pest will be convened by FAO in Ankara, Turkey, 3-7 December 1956. At the Working Party information with regard to the distribution, biology and ecology of this pest will be reviewed and its control measures will be considered. It is expected that the Working Party will formulate a program for promoting and coordinating researches in various countries affected by this pest.

FAO Meetings on Desert Locust Control

FAO convened two meetings in Teheran, Iran, in July 1956. The Sixth Session of the FAO Technical Advisory Committee on Desert Locust Control, held 3-6 July, was attended by delegates from Egypt, France, India, Iran, Pakistan, the United Kingdom and the United States of America with observers from the Arab League, Ethiopia, Iraq, Sudan and the World Meteorological Organization. The main subject discussed was the report of the FAO Panel of Experts on Long-Term Policy of Desert Locust Control. The Committee recommended, the acceptance of this report by the Director-General of FAO with due consideration of various further comments and recommendations.

The Third Session of the FAO Desert Locust Control Committee, held 8-12 July, was attended by representatives from Egypt, Ethiopia, France, India, Iran, Iraq, Jordan, Lebanon, Libya, Morocco, Pakistan, Saudi Arabia, Sudan, Syria, Turkey, the United Kingdom and the United States with observers from the Arab League and U.S.S.R. The items discussed included: recent national campaigns against the desert locust; the results of the 1955/56 international campaign against the desert locust in the Arabian Peninsula and plans for the 1956/57 campaign; the present desert locust situation; long-term policy of desert locust control; international action against the desert locust in the Ethiopian-Somali and the Chad-Sudan areas.

International Congress on Wine and Viticulture

The Eighth International Congress on Wine and Viticulture, organized by the International Office of Wine, was held in Santiago, Chile, 21 March-2 April 1956, with representatives of 20 governments attending. In the section dealing with wine diseases and pests, the control of *Phylloxera*, *Margarodes vitium*, and *Oidium* was discussed. *Phylloxera* is still regarded as an important pest, particularly in Latin America, and the Congress recommended that the participating countries intensify their research on its biology, the influence of climatic and other factors on its development, the possible application of systemic and other newly developed insecticides, and varieties of *Vitis vinifera* resistant to this pest. The possible spread of *Margarodes* has caused much concern and may cause serious losses in Latin America and it was recommended that research should place emphasis on its biology, the factors influencing its development and virulence, and control measures. For *Oidium* control, the testing of new organic fungicides was suggested.

Roma - Tip. del Senato del dott. Giovanni Bardi